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GUSTAVE A. HARRER is Director of Libraries, Boston University.

JAMES R. SCROGGS is Assistant Minister, Mt. Vernon Church, Boston. Reverend Scroggs is also a Ph.D. candidate in Psychology and Pastoral Counseling, School of Theology.

EMILY T. VERMEULE is Assistant Professor of Classics, College of Liberal Arts.

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Boston University Library — Its Past and Its Future

GUSTAVE A. HARRER

"A UNIVERSITY is composed of a library, faculty, and students." This statement was made just recently by an eastern university Dean of Students and seems to me to show a penetrating insight into the essence of a university. But more than that, it points boldly to the major problem with which Boston University struggles today, namely *a* library. For Boston University *has* an outstanding faculty, nationally and internationally recognized in many fields, and conducting educational programs which measure up to those given anywhere. It has students, active, energetic students, as mischievous as any, pursuing their educational endeavours with determination, a determination made more necessary because the third ingredient of a university, *a* library, Boston University has *not*. But now, as this University reaches toward the full realization of its potential through concerted effort, so its libraries, through consolidation, are attaining to the stature necessary to serve satisfactorily a vigorous educational program and widespread advanced research.

Today Boston University's libraries comprise fourteen physically separate collections in various states of administrative and bibliographical co-ordination with each other. While this undesirable situation is not unheard of elsewhere, perhaps it would be helpful to look briefly at the history which records—and partially explains—its development here.*

Boston University's library began, we may suppose, theoretically with the collection which served the Newbury Biblical Institute, founded in 1839, subsequently (1847) removed to Concord, New Hampshire as the Methodist General Biblical Institute, and thence to

* For this material I have drawn upon Presidents' Reports and E. Ray Speare's *Interesting Happenings in Boston University's History* (Boston University Press, 1957), but most particularly I am grateful to Dr. Robert E. Moody, who has graciously permitted me to quote freely from an unpublished manuscript of his on the history of Boston University's Libraries. All quotations not otherwise acknowledged are from that source.

23 Pinckney Street, Boston, in 1869 as the Boston Theological Seminary. But this collection was augmented only sparingly since the Congregational Library and, in particular, the General Theological Library were near at hand. It appears, "in fact, that for many years the School of Theology made annual appropriations for its support."

In 1872 the second unit of the University, the School of Law, was organized in the Wesleyan Building on Bromfield Street, but because of the closely situated collections of the State Library and the Social Law Library, this school for many years did not feel the need of extending its library collections beyond a nucleus of case books and law reports.

Not until the School of Medicine was founded did the need for a real school library become apparent. "Only the School of Medicine lacked supplementary resources near at hand (and the Boston Medical Library was not far away), which explains, perhaps, the continual emphasis which Dean Talbot placed on the library of the School in his annual reports." Even so, the early philosophy of the University was:

> to bring into one system the educational resources of the Boston area, the literary and cultural center (at least in the opinion of its own citizens) of America, and provide an organized rather than a disorganized educational experience. . . . Students were expected to live at home or to board with families, to profit by the lectures and classroom instruction of their professors . . .

And this philosophy included the utilization of the public library facilities so amply available in Boston in support of the course work of the units of the University.

In addition to the School of Medicine, the College of Liberal Arts, organized contemporaneously with it in 1873, seems to have felt the development of an integral library a necessary part of its program. Although in the beginning the Boston Public Library's extensive collections were advertised as a part of the facilities offered by this College, toward the end of the century the problem of the School's own library was recognized.

> As early as 1879 [President Warren] appealed for a collection of reference books for the college. The encouraging use of the books supplied led to the establishment of department libraries, the first of which was established by Professor Thomas Bond Lindsay as a Classical Library mainly used by

the Philological Society of which practically all Classics students were members. Dean Huntington and Professor Daniel Dorchester made gifts of books for class use in History, Literature and Political Science. The acquisition of Dean Latimer's Library (later added to the Library of the School of Theology) provided books in Philosophy. Trustee Henry O. Houghton gave the sixty-eight volume set of the Riverside Edition of British Poets. These gifts and additions, reported by President Warren in 1884, led him to write, 'An endowment of a few thousand dollars would now add to those valuable beginnings the most important works which appear from year to year, thus supplying a long felt want.' Curiously the index to the report reads: 'Beginnings of a central university library.'

In the year 1895-96 the President's report said,

> Specially prized are the new library accommodations [for the College of Liberal Arts which moved into buildings on Ashburton Place recently vacated by the Law School's move to its present location at 11 Ashburton Place]. For the first time in the history of the College room is had for the convenient shelving and use of books in hand, as also for any probable growth of their number for the next decade.

The decade passed and the collection grew to 6,485 volumes.

As subsequent units of the University were organized or added by incorporation, each as a rule brought with it a new library. Thus, shortly after the establishment of the College of Business Administration in 1913, its library had developed to a point where it needed a librarian. The School of Education was originally served by the College of Liberal Arts Library, but shortly pressures of space and staff forced the decision to split off. The old School of Practical Arts and Letters established its own library, which, however, has now been absorbed into the Main Library, the Business Library, and the Fine Arts Library since the School's demise. Sargent College, upon incorporation into the University, brought with it its library. And through the years the Schools of Social Work, Nursing, Public Relations and Communications, and Fine and Applied Arts, as well as the Colleges of General Education, Industrial Technology, and the College of Basic Studies (formerly the Junior College) have all developed their own collections to serve their curricula.

In 1947 the first Director of Libraries was appointed in the person of Floyd E. Orton. Here was the first step in the right direction, but

lacking true administrative—because he lacked budgetary—control, he could accomplish little. A beginning was made, but it was left to the directorship of Dr. Robert E. Moody for the first important but painfully slow steps to be taken. Under his outstanding, scholarly, and patient but persistent leadership from 1951 to 1960, the position of the Director of Libraries was truly established in the University and the libraries were, to a large extent, administratively unified; a central catalogue began to reveal the total holdings of the University; the library staff started to function as a unit; and libraries commenced the slow conversion from school to subject collections, with the beginnings of a unified acquisition policy.

Throughout the history of the libraries, lack of space in a central location has, of course, prevented realization of the extensive economies and improved service possible through physical consolidation. As long as separate facilities must be retained, separate and duplicate staffs must be maintained to serve separate and duplicate material. Physical consolidation must be achieved shortly and, with the construction of the new central University Library, can be. The way is clear, and the University is moving rapidly toward administrative and budgetary centralization of library effort, to prepare for the inevitably necessary physical move in the future.

But what exactly does this mean? Is it just a librarian's dream of a large, unified staff at his beck and call? Is it a desire to put all the books in row upon row of shelves, like so many stacks of bullion, a treasure to be guarded and gloated over? Rather it is the opposite: the desire of the librarians to aid, with all ingenuity at their command, the educational effort of the institution, to put the most material at the immediate command of the most people under the most satisfactory conditions. Yes, this is centralization, and given any budgetary restriction whatsoever, it is the only satisfactory answer. The specific advantages are: access of materials, economy of centralization of materials, and availability of technically competent library staff. Let us consider them in turn.

Recently I was strongly urged, in an informal conversation with several graduate students of one of the science departments, *not* to allow any further dispersal of materials. When I pointed out that only limited space was presently available for study in the main col-

lection, they countered with, "Well at least we know all the material is there and we don't have to hike all over the campus hunting it." This is, of course, precisely the point. No more—and perhaps less—than any other university of similar size and program, can Boston University afford the expense of making its library service as good at numerous physical localities as it can at one. The duplication necessary to give the proper quality of service to chemistry, physics, and math students in separate locations would ruin all but an unlimited budget. The sciences, of course, have traditionally had separate facilities because initially their approaches to the physical world around us, and hence their literatures, were quite distinct from each other. The humanities and social sciences long ago recognized their own essential interrelationships and interdependencies (though some prefer to ignore them); today this same recognition is coming home to the sciences.

We then are led directly to the second advantage: economy in the centralization of materials. *Chemical Abstracts,* to take one expensive example among many others, is essential to chemistry, physics, and biology students, and in monetary value is equal to fifteen solid research works per year. To make one common set available to all is to allow the purchase of fifteen or thirty other works for the collection. With a limited budget the only result of "apartheid" is to develop *meager, separate* and, to some extent, *duplicate* collections and require the serious student to visit *several* locations to gain access to an *insufficient* total of materials. The argument that materials should be close at hand fails to recognize this waste motion.

But let's not belabor these points; they are obvious. The third advantage of centralization is the availability of a technically competent staff. The ordering, cataloguing, and servicing of a university library collection is unfortunately extremely expensive and requires library personnel with intimate knowledge not only of the channels of procurement (which because of the disorganization of the book trade are multifarious), and the use to be made of the materials by the total university community, but a knowledge of the subject material and an understanding of the approach used toward it by scholars in the field. Personnel of this sort comes high, but is indispensable to the students and researcher. Let's look at the practical problem: to service

two physically separate collections in the fields of history and political science, or of chemistry and physics, would require a total of $10,000 annually of low paid man-hours during normal library hours. This would allow for a non-professional (both in library work and subject training) during normal hours and student supervision nights and weekends. Put the collections together and we have one-half the hour workload, and, with $10,000, the possibility of a librarian *and* a highly subject-trained person during daytime hours to develop the collection and aid scholars with an intimate knowledge of what is needed and what is available. If the Boston University library collection and staff were presently dumped into a central facility, we would have more staff-hours than we would know what to do with. But technical training is lacking.

Let's take a faculty member or graduate student pursuing research. He has to spend fifteen minutes instead of five getting to his library materials. This discrepancy of ten minutes is a negligable difference, but the saving in finding material at *that* location, with the aid of a competent librarian and *without* the delay of several days for inter-library borrowing, is not. With the aid of *trained* order personnel the correct material is expeditiously ordered; with the aid of *competent* subject cataloguers the material is clearly and completely catalogued; with the aid of a *knowledgeable* reference staff the material is quickly located. The efforts of the present staff are worthy of the most ebullient commendation. But Boston University, in order to staff its multiple libraries within a restricted library budget, has been forced to hire some personnel who, though devoted to its work and willing to work many hours over the requirement, is ofttimes insufficiently trained to give the service required.

In all of this there is an essential equation: the patrons' footsteps are in direct proportion to the amount of material and service that can be made available. However, this increase in the patrons' effort can be more than compensated for in the competent service available at a central facility. Much remains to be done: the construction of the great central library, the consolidation of staffs for better service to the students and faculty, and the development, through economies thus made possible, of a powerful acquisition program to increase the resources of a collection which, though outstanding in a few fields and strong in some, is yet barely enough for advanced research in many.

The handwriting is on the wall, but for Boston University it spells prophecy as well as an indictment. The great new University Library building will be a reality in four years, and *then* will Boston University realize the fullness of its time. Then can it strengthen its rightful position among the first universities of the country, a position already earned through the years by a faculty which has refused to be daunted by a limited library.

Space Empathically Perceived: A Religious Element in Architecture

JAMES R. SCROGGS

WHAT makes a building religious? This is broadly speaking, the concern of this paper. More specifically, we shall be concerned to show that architecture is essentially the manipulation of space, that space may be entered into empathically, and that space can be religiously expressive when perceived empathically.

Is a building religious simply because it happens to be a church, temple, or mosque? Does the local movie theater, bought by a sect group and dedicated as a church, suddenly become a religious building? Or is the meeting house outgrown by its congregation and sold to the Elks suddenly rendered a secular building? Apparently not! Yet, there are those who contend that the movie theater, store front, or basement room in the church can be made into a chapel simply by putting in an altar, stained glass windows, and various symbols of the given tradition. This rather superficial point of view sees the religiousness of a building as dependent upon its appointments. We need only ask whether one of the great Gothic cathedrals would cease to be religious if the altar, statues, and windows were removed.

The use to which a building is put no more determines its religiousness than does the subject matter of a painting determine the degree to which it is religious. Nor does furniture make an interior space religious or secular. The essence of architecture is the space which it encloses. Some spaces are religious, some are secular. If the space which a building encloses is religious, the building is a religious building regardless of the use to which it is put or the appointments which adorn it.

1. Architecture as Space

All of the arts deal with space. Even the intervals between notes in music may be conceived of as space. Painting works in two dimensional space though it may represent three or even four dimensions. Sculpture and architecture alone operate in three dimensional space.

But, architecture is not simply sculpture grown large; architecture is unique in having interior space.

> Architecture, however, is like a great hollowed-out sculpture which man enters and apprehends by moving about within it.[1]
>
> * * * * * * * * *
>
> Internal space, that space which . . . cannot be completely represented in any form, is the protagonist of architecture.[2]

"The nature of space within our buildings or between them is indeed the reality of architecture."[3]

The entire history of architecture can be understood as the history of various treatments of space. Classical space, early Christian space, Romanesque space, Gothic space, Renaissance space, Baroque space, and modern space all have their own unique characteristics. We shall be concerned here only with the treatment of space in modern architecture and, in a few instances, with its relation to previous modes of handling space.

As the Renaissance discovered the third dimension of space, so the twentieth century has discovered the fourth dimension. Space can no longer be considered apart from time. This is particularly true of interior architectural space since man moves about within a building.

> . . . no work of architecture can be experienced and understood without the fourth dimension, with the time needed for our walk of discovery within it.
>
> * * * * * * *
>
> But in architecture we are dealing with a concrete phenomenon which is entirely different [i.e., from painting and sculpture]: here, man moving about within the building, studying it from successive points of views, himself creates, so to speak, the fourth dimension, giving the space an integrated reality.[4]

Neither space nor time can be considered independently; they are inextricably interrelated.[5]

This new space-time insight first became apparent in the work of the Cubists. Giedion goes so far as to say "the method of presenting spacial relationships which the Cubists developed has furnished the plastic principles of present-day visual approach."[6] Describing this approach, he says:

> It views objects relatively: that is, from several points of view, no one of which has exclusive authority. And in so dissecting objects it sees them simultaneously from all sides—

> from above and below, from inside and outside. It goes around and into its objects. Thus, to the three dimensions of the Renaissance which have held good as constituent facts throughout so many centuries, there is added a fourth one —time.[7]

Three characteristics of the modern treatment of space may be isolated, although no one of them is independent of the other two. They are: relativity, simultaneity, and the interpenetration of spaces. Relativity means that "exhaustive description of an area from one point of reference is, accordingly, impossible; its character changes with the point from which it is viewed."[8] The Renaissance single point perspective is no longer adequate. Simultaneity in painting means that the time required to move from the point where one views the front of an object to the point where one views its side or back, for example, is compressed into a single moment as two or more views are presented simultaneously. In architecture, simultaneity means that the time required to pass from the outside of a building to its interior is compressed into a single moment so that, by the use of glass walls for example, both interior and exterior can be viewed simultaneously. In painting, simultaneity may also refer to the depicting of an entire time sequence of motion comprehended at once, as in Duchamp's "Nude Descending the Staircase." The interpenetration of spaces means that spaces are no longer discrete and self-sufficient as in the Renaissance, but flow into and penetrate each other to form one integrated whole.

A few examples may help to clarify the meaning of these terms. In regard to relativity, Giedion says of Gropius' *Bauhaus:* "The eye cannot sum up this complex at one view; it is necessary to go around it on all sides, to see it from above as well as from below."[9] Of Le Courbusier's *Villa Savoie* he says: "It is impossible to comprehend the *Savoie* house by a view from a single point; quite literally, it is a construction in space—time."[10]

Simultaneity, as observed above, is possible wherever glass walls or partitions are used. Perhaps, however, simultaneity is best considered as a consequence of the interpenetration of spaces. We can then point to the *Tour Eiffel* as the first example of simultaneity and the interpenetration of spaces in modern architecture. The *Galerie des Machines,* built in the same year and employing the same structural

principles, also illustrates this condition. We see it also in the *Villa Savoie,* constructed in a very different manner.

> The body of the house has been hollowed out in every direction: from above and below, within and without. A cross section at any point shows inner and outer space penetrating each other inextricably.[11]

By the use of such devices as the transparent staircase, in Aalto's *Mairea* house "the feeling of an uninterrupted flow of space throughout the house is never lost."[12]

Mention above of the interpenetration of spaces to form an integrated whole, and especially of "an uninterrupted flow of space," leads us to make a few remarks about the similarity of modern and Baroque conceptions of space. Giedion believes that Borromini was on the verge of achieving what we have called the interpenetration of spaces in some of his later churches, and points to *Sant' Ivo* as an example.[13] He also sees the concept realized by Neumann in the *Vierzehnheiligen.*[14] Describing Baroque space, Giedion says:

> . . . its outstanding feature is the development of a specific kind of universality. In our field this manifests itself as a new power to mold space, and to produce an astonishing and unified whole from the most various parts.[15]

This same interest in a "unified whole from the most various parts" as well as an interest in space in flow, both of which characterize Baroque space, is found in a definition by Breuer of the character of the modern treatment of space:

> What is the principal difference between what we call "modern space" and the attitudes of past architecture? I think it is one all-important change in our lives: we have learned to move faster—faster than anyone ever moved before. We no longer see little details, disconnected or detached from the over-all picture. We see continuities.
>
> * * * * * * * *
>
> We have a new experience of space: space in motion, space in flow.
>
> * * * * * * * *
>
> We subordinate everything to the greater unity of this new space.[16]

These remarks may give some indication of why the modern style

of architecture has been called by some Neo-Baroque. The analogy, however, should not be pushed too far.

2. *Empathy*

Empathy is one of the processes which operate in aesthetic experience. Most aestheticians would agree that without empathy there can be no aesthetic experience. Some of its more enthusiastic partisans tend to identify empathy with aesthetic experience. In any event, there is great disagreement concerning the nature and operation of empathy.

Theodor Lipps is generally conceded to be the father of the theory of empathy or *Einfühlung*. In explaining his theory Lipps uses as an example the perception of a Doric column. One perceives the column as rising, as bracing itself up under the load of the architrave. The upward thrust of the column, of course, does not exist in the column itself but is imputed to it by us. We feel ourselves into the column, project ourselves into it, and then on the basis of our knowledge of its construction feel in ourselves the movements, stresses, and strains which we would experience in constructing or even being a column. These movements and forces, however, are experienced as being not in ourselves but in the column; the ideas of these sensations are projected unconsciously into the object. Thus, the object is unconsciously personified or anthropomorphized.

As Lipps developed his theory in succeeding publications, he became more and more metaphysical, finally contending that in aesthetic empathy the ego is somehow actually projected into the object.

> Empathy is the fact here established, that the object is myself and by the very same token this self of mine is the object. Empathy is the fact that the antithesis between myself and the object disappears, or rather does not yet exist.[17]

Lipps goes on to make his point doubly clear: "I am so far as my consciousness is concerned, entirely and wholly identical with it."[18]

The early theoretical writing of Vernon Lee, the first writer in English on the subject of empathy, is based on the introspective researches of her associate, Miss C. Anstruther-Thomson, in which strong emphasis is placed on motor activity. The thing which seems to have impressed Lee at the time she wrote her article, "Beauty and Ugliness," was the report by Anstruther-Thomson of the many kinesthetic sensations and occasional overt motor behavior which she experienced

in viewing objects of art. A great deal was made of the fact, for example, that in order to fully appreciate a certain statue Miss Anstruther-Thomson felt it necessary to imitate with her body, at least partially, the *contrapposto* of the stone figure.[19] Thus, Lee concluded, on the basis of the James-Lange theory of the emotions, the feelings which we have about a work of art derive from the sensations sent back to the brain by our kinesthetic receptors. However, these sensations are not perceived by the viewer at a conscious level, nor are the feelings to which they give rise experienced as originating in his own body. Rather, the feelings are projected into the art object and perceived as belonging to it.

Herbert Langfeld is a more modern exponent of the motor theory of aesthetic empathy, incipient action, or "nervous set." The perception of a line or shape stimulates in the viewer memories of the movement of the hand in drawing such forms; or, if it is an unfamiliar form, he traces it in his imagination. These memories or ideas of movement are expressed either as actual motor behavior or as tendencies to movement.[20] "A tendency toward movement may be described as a motor set or pattern which must precede any overt action."[21] Langfeld accepts the idea that empathy involves the bringing into consciousness of past memories; moreover, though he does not hold that overt motor activity is necessary for empathy, he does not discard the motor element. He speaks rather of nervous sets and tendencies to movement, and he produces evidence from physiology to indicate the possibility of the shifting of tensions in the muscles without overt movement.[22] These are to be understood as changes in postural tonus. "In all such instances, the impulses may be so far in the initial stage that there is no movement produced and frequently not even a consciousness of strain or of other similar sensations."[23] And it is the character of these impulses in the kinesthetic receptors which determines, consciously unbeknown to the viewer, the affective tone which is attributed to the object.

Fortunately we need not solve all of the various arguments of the empathy theorists here. For our purposes, we shall assume the hypothesis that empathy is, simply stated, the attribution to objects of our perception the feelings which those objects arouse in us. The process whereby this takes place is analyzable into three steps: mimicry, feeling, and projection. In perceiving a line or shape a person

tends to mimic it with either overt movements or at least nervous sets. This movement or set then stimulates the kinesthetic receptors which send back nerve impulses to the brain. These impulses, in turn, give rise to a conscious feeling of emotion or feeling tone. However, this feeling is not recognized consciously as originating in the viewer's body, but is projected into the object and perceived as belonging to that object.

We have the rudiments of a theory of the empathic perception of space in Geoffrey Scott's *The Architecture of Humanism*. By "humanism," Scott means to refer to the theory of empathy in much the same sense that Lee refers to her theory as anthropomorphic aesthetics.

> The whole of architecture is, in fact, unconsciously invested by us with human movement and human moods. . . . *We transcribe architecture into terms of ourselves.*
>
> This is the humanism of architecture. The tendency to project the image of our functions into concrete forms is the basis, for architecture, of creative design. The tendency to recognize in concrete forms, the image of those functions is the true basis, in its turn, of critical appreciation.[24]

Scott illustrates his theory by pointing out that the discomfort which we experience in viewing an apparently "top-heavy" building is due not to ideas of instability but to the functioning of the empathic process.[25] He concludes that "the naïve, the anthropomorphic way which humanizes the world and interprets it by analogy with our own bodies and our own wills, is still the aesthetic way; it is the basis of poetry, and it is the foundation of architecture."[26]

Scott observes that there are three elements of architecture which may be empathically perceived: lines, masses, and spaces. Yet, Scott agrees that space is the protagonist of architecture. He says,

> But it has also its peculiar province and a pleasure which is typically its own. It has the monopoly of space. Architecture alone of the arts can give space its own value . . . but architecture deals with space directly; it uses space as a material and sets us in the midst.[27]

Space, according to Scott, has an emotional impact, and this impact comes about by means of empathy.

> But though we may overlook it, space affects us and can control our spirit; and a large part of the pleasure we obtain

from architecture—pleasure which seems unaccountable, or for which we do not trouble to account—springs in reality from space.

* * * * * * * * *

We adapt ourselves instinctively to the spaces in which we stand, project ourselves into them, fill them ideally with our movements.[28]

To reiterate then very simply, the essential reality of architecture is space, and the aesthetic mode of perceiving space is empathic perception.

3. Space as a Religious Dimension and Empathy as a Religious Mode of Perception

Space is the one reality which man in existence can never escape. The mystic in his trance may succeed in freeing himself from time and from all other dimensions of existence, but still he is in space. Space is uniquely inescapable reality. "To be means to have space."[29]

It would be pantheism to identify God with space, yet the relationship between the inescapability of space and the omnipresence of God is striking. This would suggest that space may at least symbolize the eternal and divine ground of our being.

A possible solution to this problem is suggested by Karl Heim who apparently agrees that space has a uniquely religious significance. Heim presents evidence from modern theoretical physics to indicate that Euclidian three-dimensional space is only one of many spaces which have reality. Spaces in four, five, six, or any number of dimensions can be dealt with mathematically, though they cannot be represented or even conceived of concretely. These spaces all coincide in that they are all infinitely expanded, as space by definition is. Hence, they are omnipresent though we are not aware of them.[30]

Heim borrows an illustration from Abbott's *Flatland* to develop his point. The story is a fanciful one of a group of people who live in two dimensions (Flatlanders) who are invaded by a people who live in three dimensions (Spacelanders). The Flatlanders, the walls of whose houses are nothing but lines, are astonished by the ability of the Spacelanders to pass through walls. For the Flatlanders, operating in two dimensions, it is possible to pass from one side of a line to the other without intersecting the line. To the Spacelanders, however, having knowledge of the third dimension, another possibility is open

—to pass over or under the line. To the Flatlanders, the ability to pass from one side of a line to the other without intersecting it constitutes a paradox. Heim's general conclusion is that the revelation of a new space carries with it the power to resolve paradoxes.[31]

The next step follows quite logically. The eternal dimension, the divine space, is that space beyond ours yet coinciding with it and in which paradoxes are overcome.

> It is only the space itself that we cannot escape. Go where we may, we shall still run into it. That is why there is no other form of expression for the presence of the inescapable God than space.
>
> But this cannot be the three-dimensional observable space in which for the time being we find ourselves situated. For, as it says in the Old Testament, we cannot see God and live. It follows that there must be some second space, just as all-present as the three-dimensional space but completely unobservable.[32]

Heim refers to this space as the suprapolar space, i.e., that space where the paradox of polar opposites is resolved.[33] This is the space in which man encounters God. It is also the space in which that quality of human interpersonal relationships occurs in which the subject-object split is overcome and true communion takes place. Buber's symbol for this encounter is the *I-Thou* relationship. Hence such paradoxes as the mystic union: they are two, yet they are one.

It would seem that from the ontological perspective the suprapolar space and all those spaces beyond our own might be conceived of as having reality. However, this issue need not detain us here. What Heim has presented is a new mythology, a new set of symbols, which may well be more adequate for our age, or at least for our scientists.

This mythology does not bear directly on architecture since the suprapolar space cannot be represented. But after all, this is logically to be expected in view of the Judeo-Christian prohibition of idolatry. Nevertheless, Heim does make very clear the appropriateness of space as a religious symbol.

Furthermore, Heim's new mythology has ramifications for our theory of empathy. For, not only is empathy the aesthetic mode of perceiving space, but empathy operates (metaphorically speaking) in that space where paradoxes are resolved. According to Lipp's analysis,

the subject-object split is overcome in empathy. In fact, Lipp's language is almost mystical as he describes how the self is merged with the art object in the experience of aesthetic empathy.[34] Regardless of obvious inadequacies in Lipp's theory, his description of the subjective experience of the viewer in aesthetic empathy is phenomenologically quite accurate. The split between viewer and art object is overcome, or does not yet appear.

The *I-Thou* relationship between persons, which according to Heim takes place in a space beyond three-dimensional Euclidian space, is also an empathic relationship. It is perhaps not going too far to say that such a relationship is a religious relationship.

We may conclude, then, that space is a religious dimension and the most adequate symbol for the Divine, and that empathy is a religious mode of perception, a mode which is particularly appropriate to the perception of space.

The job of the architect is to mold, manipulate, and enclose three-dimensional space. The character of the space thus created will determine the affective response of the empathic viewer of that space. As there is no single religious emotion, so there can be no single religious space. Nevertheless, some spaces are more religious than others.

Buildings for religious worship have traditionally followed one of two general conceptions of religious space: the space of the forward march or the space of the vertical lift. Scott illustrates the former by observing the compulsion which one feels to walk forward upon viewing the parallel colonnades of a basilican church.[35] This same feeling of being drawn forward was built into the Egyptian temples and the Temple of Jerusalem. This is entirely appropriate to Egyptian religion, Judaism, and Christianity, for they all share a linear view of history. The whole concept of the pilgrimage is incorporated in this axial, horizontal space.

Buildings constructed about a central vertical axis often awaken in the viewer a feeling of vertical lift. This is very true in the Pantheon in Rome, where no doubt the hole at the top of the dome contributes to the feeling of being drawn upward. Many of the central buildings of the Renaissance, however, do not produce this feeling of vertical lift. Rather, they are static and urge the viewer to remain in one location. This is understandable, since the space of the vertical lift is expressive of the mystical tendency; and the Renaissance man much

preferred to structure his world rationally. Furthermore, where there is no movement, there is no tension. The Renaissance man felt at home in the world, but both the Gothic man and the Mannerist felt severely the tension of human existence. Hence, the strong axial emphasis returned in the churches of the Mannerist period.

Wherever there is movement in architectural space, tension is created in the viewer. Whether it be horizontal movement or vertical movement, there is a tension set up in the viewer between the point at which he finds himself and the point to which he feels drawn. This tension, the tension between man in the condition in which he finds himself and man in his essential nature, is the basic dynamic in all religion. Most Classical and Renaissance architecture lacks this tension, and hence, it is secular and humanistic.

Neither the horizontal nor the vertical axis is innately more religious. This depends on the mythology and symbolic vocabulary of the particular community which erects the building. By and large, churches have been so constructed as to include both the space of the forward march and the space of the vertical lift. When such a combination of spaces is realized, a new tension is introduced, the tension between the vertical movement and the horizontal movement. This tension is most evident in French Gothic architecture. Here, the tension is felt as soon as one enters the building. Standing just inside the western portals of a Gothic cathedral, one feels drawn forward and even more strongly upward at the same time. However, this same tension is present in a different way in a basilican church with a dome over the crossing—take St. Peter's, Rome, or St. Paul's, London, as examples. Upon entering such a church, one feels impelled to walk forward while experiencing very little upward lift; however, when one reaches the end of the nave and steps into the space under the dome he feels lifted upward with a compelling power.

The power which lifts one, of course, is his own power; for here is a dramatic case of empathy. In fact, it is safe to predict that if accurate measurements could be taken on subjects undergoing this experience, we would find that a large proportion of them actually make observable movements of stretching upward, standing on tiptoe, etc., and that the remainder exhibit incipient nervous impulses to do so.

To return to the subject of tension in religious architecture, it is unfortunate that so many contemporary church architects (perhaps

having imbibed too heavily of peace-of-mind religion) seek to eliminate tension from religious buildings. Platitudinously they speak of the church building as a place for restful, quiet meditation, where the worshipper may forget his worries and find peace and tranquility. Certainly a church need not be as nervous as the "Flamboyant" Gothic, but neither should it be a sedative nor a place to escape from reality.

The church without tension expresses no judgment. It is humanistic in a pejorative sense. It implies that there is nothing wrong with man, that he is all right as he is, that there is no difference between what he is and what he ought to be—in short, it ignores sin. From the perspective of Christian theology, we can only say that the tension (the manifestation of sin) is in man. The architecture which enables man to project and objectify this tension will have therapeutic effects; for, seeing projected before him on the "screen" of architectural space the dialectical tension between what he is in existence and what he is in essence, man falls implicitly under the judgment of God. Faced with this judgment, this insight into his estranged condition, the individual worshipper may be motivated to seek God's grace. The church architecture which avoids tension simply provides for its tenants the denial and repression of the reality of sin; and if depth psychology be correct, such frustration can have crippling effects.

In modern painting, music, and literature we find ample expression of the high degree of tension which is characteristic of our age; yet in the field of church architecture, the desire for security seems to have triumphed. Very few contemporary churches express the tension which their congregations must, at least, subconsciously, experience. It is interesting to note that the brilliant proposal of John M. Woodbridge, which showed such a piercing insight into the essence of Gothic architecture, to complete the central tower of St. John the Divine in New York with a tension system of a steel cage suspended by four steel cables, was not accepted for execution.[36]

In conclusion we must affirm that it is impossible to lay down any specific rules for the creation of religious spaces. This ability is the peculiar talent of the artist. However, to be able to construct religious spaces, the architect must be not only an artist but a religious man himself. And further, we may say that a space will not be religious unless it has movement and tension. Whether vertical or horizontal movement will be perceived as more religious will depend upon cul-

tural factors and individual temperament. In any event, a given space will not be perceived as having movement or tension unless it is entered into empathically, for the movement or tension is not actually in the space but in the observer. The space in which a congregation worships should communicate "what the church is, believes, and does. . . .[37]

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3 Marcel Breuer, *Marcel Breuer: Sun and Shadow: The Philosophy of an Architect,* Peter Blake (ed.), (New York, 1955), p. 61.

4 Zevi, *op. cit.,* p. 27.

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9 *Ibid.,* p. 493.

10 Giedion, *op. cit.,* p. 518.

11 *Ibid.,* p. 518.

12 *Ibid.,* p. 594-95.

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28 *Ibid.,* pp. 168-169.

29 Paul Tillich, *Systematic Theology* (Chicago, 1951), I, p. 194.

30 Karl Heim, *Christian Faith and Natural Science* (New York, 1953), p. 139.

31 Heim, *op. cit.,* p. 145.

32 *Ibid.,* p. 167.

33 *Ibid.,* 159 ff.

34 Above, pp. 14-15.

35 Scott, *op. cit.,* p. 169.

36 John Knox Shear (ed.), *Religious Buildings for Today* (—, F. W. Dodge Corporation, 1957), pp. 80-83.

37 E. A. Sövik, "Liturgical Art and the New Churches," *Response,* vol. 1, no. 2 (Advent, 1959), p. 19.

New Excavations in Western Greece

EMILY T. VERMEULE

EDITOR'S NOTE: *This is the second and concluding portion of Professor Vermeule's article. The first part was published in the February, 1961, issue of the* JOURNAL.

The Royal Tomb of Moira

While we were working at Mouriatada the site was crowded daily with local tourists, eager for the romance of archaeology and the pleasure of watching us eat and wash. These peasants, whose knowledge of the countryside was extensive and acute, brought constant reports of better sites around the bend in the road or over three hills. In one case they were magnificently justified. This was the discovery of the site of Moira and its royal tomb an hour's ride from Mouriatada to the northwest.

The older Moira villagers remembered having laid a charge of dynamite on a hill called Peristeria (Pigeons), to get stone for a bridge they were building in 1931-32. The stone blown up had been so surprising in quantity and quality, both *poros* limestone and the local conglomerate, that the peasants remembered almost every block. There was also a tale of a hole in the hill where dogs used to chase rabbits into a hollow space. More hopeful yet, the dynamite had also blown up a small lead figurine described as a naked woman wearing a belt, which Marinatos recognized from its size and description as a well-known Minoan type representing a young nude warrior with a dagger thrust through his girdle. This motif had been progressively refined in Crete from the Petsofas figures of about 2000 B.C. to the fall of Knossos, but only two of them have been found in Greece so far, both from a small *tholos* tomb at Kambos in Lakonia. The Moira statuette was melted down for shotgun pellets before any one competent saw it. Our foreman was sent to investigate the explosion site one night after work, and succeeded in clearing by moonlight the two upper corners of widely spaced limestone door jambs; he walked back to Mouriatada after midnight singing original compositions about the biggest Mycenaean tomb he had ever seen.

We rode down the next Sunday with a few workmen to explore further, and stripped the earth from the face of the upper jambs and the higher levels of the *dromos*. We were absorbed enough in architectural problems to respond only with a superior laugh when the foreman wanted to add the further excitement of "writing" in the tomb. All our workmen had been overstimulated by the drama of the Linear B archives at Englianos, and we had explained to them many times that writing only occurs in palaces, never in tombs; that they were not likely, under these conditions, ever to make so spectacular a find. But the foreman was insistent, and he was absolutely right: the second block down on the left door jamb was lightly incised with the sign of a branch lying horizontally. We rushed back to finish protecting Mouriatada against the winter, and shifted camp for the last time to Moira.

The tomb site occupies the crown of a steep round hill which falls in a sheer cliff on the north to the broad bed of the river Kyparisseis. Like Mouriatada, Moira commands a natural boundary line, the so-called Aulon between Triphylia and Arkadia where the modern road and railroad run now from the west coast to Corinth, on the other side of the river. Unlike Mouriatada, Moira was apparently not walled, and its major period was considerably earlier: Late Helladic I, or the sixteenth century B.C. Both the remains of settlement on the hilltop (two or three small buildings and walls) and the huge tomb cut into the east slope belong to this first phase of Mycenaean culture, the opening of the Late Bronze Age. The inhabited buildings were sprawling and undistinguished, but the tomb was another matter.

The dimensions turned out even more impressive than we had suspected. Although the dangerous conditions of excavation would not allow it to be completely dug, Marinatos succeeded in clearing the entire *dromos,* doorway and *stomion* (between the door facade and the chamber). The *dromos* measured 28 meters long (nearly 85 feet), and its inner half was covered with a fine pebbled floor. It enters the hillside almost flat, and its earth sides are held in place by ashlar limestone blocks close to the facade. At the facade, the *dromos* contracts into limestone jambs cut in setbacks, and between them rises a blocking wall of small flat stones which guarded the *stomion* and chamber from intrusion. The doorway is 5.10 m. high (just over

fifteen feet) and 2.32 m. broad at the base; the *stomion* runs about 7.0 m. deep, built of massive and well-squared limestone blocks. The danger threatening the workmen was caused by the dynamite charge, which had blown off the two outer lintels over the *stomion* and deposited one of them in the field below; the other was presumably incorporated now in the village bridge. The third innermost lintel had been split on one end by the force of the explosion so that it barely overlapped its supporting wall; a huge block of conglomerate, over ten feet long, six wide, and one deep, it must weigh several tons and is poised to crash the moment the surrounding earth is cleared away. Similar danger in the Tomb of Aegisthus at Mycenae has deferred its complete excavation for many years, since 1892.

Apart from its threat, the lintel raised a variety of serious problems. Its inner face was curved in both directions, to follow the horizontal curve of the inner chamber, and the vertical profile of its vaulting. This should have been a clear indication of date, since only later *tholoi* like the Panaghia Tomb at Mycenae display this refinement, and they are dated by pottery and stylistic development to 1450-1400 B.C. At Moira the pottery was plentiful and consistent: it all dated to the end of Middle Bronze and the beginning of Late Bronze, with an overlap of matt-painted Middle Helladic sherds and Late Helladic I-II sherds; in absolute terms it should not be dated later than 1550 B.C. How it happens that a previously unknown site in the isolated western hills should possess a tomb more advanced than those of Mycenae by a century is still mysterious, and not the end of the tomb's mysteries.

From all calculations the chamber of the tomb should measure between twelve and thirteen meters in diameter. Marinatos was not able to clear more than a small square of it behind the lintel, with volunteers from among the workmen who had been impressed by his skill with a revolver. He found, with disappointment, that others had been there first: just above the floor were the black sherds of Hellenistic robbers, and the traces of a fire they had lit. The floor was also covered with minute scraps of gold foil, a sign that the tomb had once been very rich and that probably enough remains, overlooked by the thieves, to reconstruct the power and cultural achievements of the original builders.

The most intriguing, and most generally important, aspect of the

Moira tomb is the presence of carved signs on its facade: the branch our foreman had seen was followed on the next block below by the ancient sign of the double axe, again lying on its side. (Fig. 3.) It may not be correct to call these symbols "writing," although they resemble writing in two ways: the forms are related to signs in both Linear A and Linear B, and they obviously had some meaning or symbolic value for those who carved them on the tomb. Their position is conspicuous; they seem to be a unique example of public, monumental symbolism on the Greek mainland. However, neither the branch nor the double axe occurs in precisely this form in either of the script-syllabaries, Minoan or Greek. The only precise parallel is the series of "masons' marks" incised on stone blocks in the palaces of Crete, at Knossos, Phaistos, and Mallia.

"Masons' marks" acquired their name simply from the material on which they are used, like "potters' marks" on clay vases. Our understanding of them is only partial. They appear on foundation and wall blocks of the earliest palaces in Crete about 1900 B.C. as simple signs not fussy to carve into stone; they continue until about 1600 B.C. becoming gradually more lightly incised; they are very much less common in Late Minoan after 1580 B.C., and are then usually considered to be on blocks re-used from older palace structures. They retain their pictorial content until the end—wheels, stars, tridents, axes—while the scripts quickly learn to abstract forms from pictorial images in a more business-like way. In Linear B the derived abstraction of the axe has the value *a*, of the branch *i* or pu_2. There is no guarantee, of course, that similar values prevailed in Linear A, and no attempt has been made to assign values to masons' marks at all. Evans satisfied himself that their significance, if any, lay in a rebus-like pictorial announcement, with the trident occurring on "sea-gates," the double axe on cult pillars, the others more obscurely in the same style. The double axe and branch are especially common at Knossos, singly and in combination, but they also occur at Phaistos and Mallia in different contexts.

On close consideration it becomes difficult to believe that these signs are literally masons' marks at all. They appear almost at random, not in series on blocks that might be difficult or confusing to set in place. They are often meant to be seen, carved on pillars in open corridors, on doorways, on the finished walls of state apartments.

Sometimes two or three signs are put on a single block but none on neighboring blocks; this can scarcely be part of a builder's directions to his crew. They are extremely rare on the mainland, all in contexts later than the Moira tomb: a wheel and trident at Mycenae, an axe at Pylos. And, curiously, in Crete they also occur on a very few tombs.

These marked tombs are all at Knossos, and have in common a monumental impressive architecture. They are the famous Temple-Tomb, the Royal Tomb of Isopata, and the new *tholos* tomb on the Kephala ridge.[1] The Temple-Tomb has axes in its pillar-crypt and tridents on its door; the Isopata tomb has axes, branches, a "gate," and a long inscription on a single block: branch, axe, trident, wheel. The Kephala tomb, published in 1958, combines mason-marked blocks in the interior with a unique inscription on a door-block of the facade like Moira; the forms are Linear B, and could be transliterated *a-pi*. The excavator suggested that it might be an official sealing-mark to show that the tomb had not been robbed at the last inspection; he goes on, "Whatever may have been the interpretation, however, of this inscription, it seems evident that the signs were not to be reckoned merely as masons' marks, and that they were intended to be read by people entering the tomb." The word has no ready meaning in Greek for this context, and the inscription may be Linear A. On the mainland, the only masons' mark connected in any way with tombs, apart from Moira, occurs on two blocks from a disordered *poros* wall around the tumulus of the Treasury of Atreus at Mycenae; both of these are lightly incised with branches. One suggestive fact, which I cannot interpret pointedly yet, is the presence of either the axe or the branch in all these tombs.

One principal contribution made by the Moira Tomb is to weaken the theory that such marked blocks are re-used in tombs from earlier architectural structures which have been dismantled or remodeled. The limestone of the Moira facade is local, from a quarry discovered by Marinatos near Mouriatada. The blocks cannot therefore have been imported for re-use from Knossos or anywhere else. Nor is it likely that they had once been part of an earlier local palace. There

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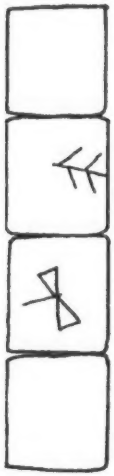
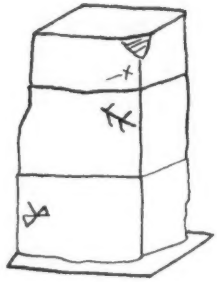
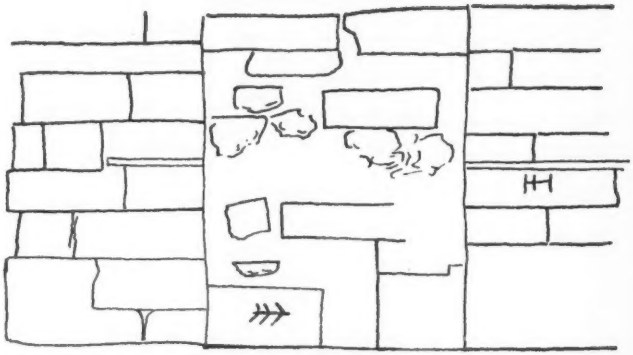
[1] Evans, *Palace of Minos IV*, 959 ff.; *Prehistoric Tombs of Knossos* 166; R. Hutchinson, *BSA* 51 (1956), 71 ff. See now Hood, *Antiquity*, September, 1960. There is also a (re-used?) block in Shaft Grave 25 at Zafer Papoura, with two signs.



MOIRA

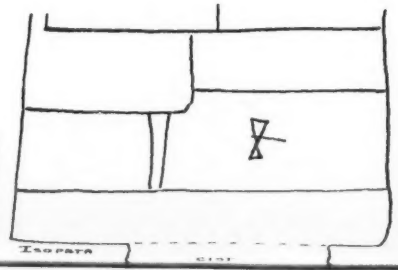


MALLIA



ISOPATA

ISOPATA



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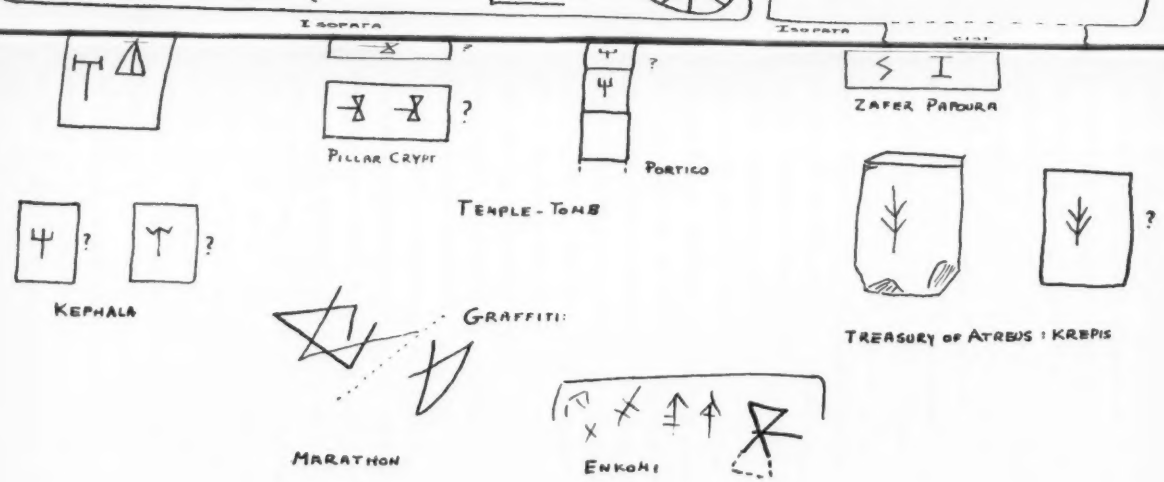
ISOPATA
ISOPATA
ZAFER PAPOURA
PILLAR CRYPT
PORTICO
TEMPLE-TOMB
KEPHALA
GRAFFITI:
TREASURY OF ATREUS : KREPIS
MARATHON
ENKOMI

Fig. 3

is no palace at Moira, so far at least; the largest structure on the hill, North Building, is built of small fieldstones and is contemporary with the tomb: Late Helladic I. Since the tomb was planned and constructed in the opening years of the Late Bronze Age, just after the beginnings of Mycenaean civilization with the Shaft Graves of Mycenae, it would be astonishing to find any "palace" of such architectural quality preceding it; our relics of Middle Bronze architecture are dismal and few, and indeed no monumental Mycenaean domestic structures have yet been found in Greece at any period before, at the earliest, 1425 B.C.

It remains, then, to construct some reasonable theory explaining both the architectural sophistication of the tomb at this early period, and the signs set on its public face, so long before any other traces of script-consciousness in Greece. The early sixteenth century B.C., the time of our concern, is throughout Greece the time of the first full impact upon the Greeks of Minoan culture, tempered by subsidiary influences from the Near East and Egypt. About 1550 first attempts at writing appear on Cyprus under similar Minoan influence, and Mycenaeans in any sort of contact with Knossos must have been equally aware of a fairly developed writing system there, though they may not yet have grasped its potentialities for themselves. In other ways strong imitation of Minoan achievements is well known: pottery, glyptic, gold work, and probably architectural plans and skills. The problem of whether the distinctive Mycenaean *tholos* tombs owe anything to a Cretan tradition or are in an intrusive northern megalithic style is still warmly debated. The first *tholos* tombs at Mycenae (Cylopean, Epano Phournos, and Aegisthus), the Kephala tomb, and the Moira tomb are all roughly contemporary, the weight of evidence being slightly in favor of mainland priority, and certainly the general scheme being much more favored in Greece than Crete.

One odd feature is the presence of bee-hive chamber tombs in Pylos at a very early date, as in the Volimidhia group discussed above. While most chamber tombs are later than *tholoi* and are square, rectangular, or roughly irregular rooms cut into bedrock, the Pylos tombs are perfectly round and cut into a pointed vault exactly like *tholoi* in every way except that they are carved out and not built; they also go back to Late Helladic I, in the sixteenth century. Genuine *tholoi* are also dense in the Pylos area, as many as at Mycenae and in the Argolid,

although of course Marinatos' excavations of them are much more recent and they are consequently less familiar in the repertoire of art survey courses. One general conclusion must be that the west coast was in contact with Crete as early as the east coast, and that somewhere near Pylos there was some strong early center corresponding to Mycenae in the Argolid—perhaps more provincial and certainly so far without the incredible riches of the Shaft Graves, but with the same sudden explosion into architectural grandeur backed by commercial wealth superimposed on a relatively primitive Middle Helladic culture. The Royal Tomb of Moira embodies all these separate historical and artistic strands: rather poor Middle Helladic pottery and local native handmade wares mixed with the fine new Minoanizing pottery of Late Helladic I and II; a full-blown impressive architectural creation independent of local funeral traditions but corresponding to the first royal tombs elsewhere in Greece; a deployment of wealth for burial rather than domestic structures (this may be partly Egyptian influence, like the public use of symbols on the facade); and finally, an adoption of signs from the Minoan repertory in an area historically illiterate. It suggests an incoming northern dynasty as at Mycenae, whose power was founded on either trade or mercenary service abroad, and which was in direct contact with Crete, probably Knossos, during the early sixteenth century. In matters so obscure as these it is pleasant that we possess one piece of good ancient literary evidence for interchange between Pylos and Knossos, the second part of the Homeric Hymn to Apollo, which seems in other ways to draw on very early sources. Apollo has just decided to found his sanctuary at Delphi and is wondering how he will staff it:

> "Wondering this, he noticed out on the pale green sea
> a ship going fast; in it were many men, good people,
> Cretans out of Minoan Knossos, who now for their lord
> conduct the holy rites and announce the prophecies
> of Phoibos Apollo, god of the gold axe, when he speaks
> oracles from his laurel under Parnassos' folds.
> They were sailing their quick black ship to sandy Pylos
> on matters of business and profit among the men of Pylos."

Though Apollo stole the ship he saw, there must have been many other Cretans sailing those seas, and the Royal Tomb of Moira demonstrates impressively enough that some came through unmolested.